

5440-00

Elementary Education (Revised 11/21/13)

The holder is authorized to teach grades K-6.

In order to qualify for this endorsement, the candidate shall demonstrate that s/he meets the foundational standards identified in *Vermont's Core Teaching Standards*. The following knowledge and performance standards for the four major content areas of the elementary curriculum build on the *Core Teaching Standards* and require elementary teachers to develop and implement instruction that is both content specific and interdisciplinary, as appropriate.

English Language Arts Knowledge Standards

The educator demonstrates knowledge of research-based principles and processes underlying literacy development, and the components of effective instruction, as reflected in the standards approved by the State Board of Education for students. Specifically, the educator understands:

Foundational Skills: the developmental progression of print concepts, phonological awareness, fluency, phonics and word recognition; the factors that influence fluency; the relationship between English phonemes and their graphemes; the developmental stages of spelling and morphological awareness

Development of Oral Language and Literacy: processes, principles, and dimensions of oral language acquisition and stages of second language acquisition; the relationship between oral language development and literacy development; the development of emergent and early literacy; the impact of physical, emotional, and cultural factors on language development and acquisition of reading and writing

Literature, Informational Text, and Media: the quantitative and qualitative dimensions used to measure text complexity levels; text structures, genre features, and critical reading strategies for text analysis; techniques for incorporating fine and performing arts as expressions of human emotion, culture, communication, and as vehicles for enhancing learning opportunities across the curriculum

Speaking and Listening: the elements of effective verbal and non-verbal communication in a variety of settings for a variety of purposes, including grammar and usage, point of view, reasoning, and effective use of evidence and rhetoric and register

Language: the purposes of language and approaches to analyzing language; vocabulary development and its relationship to literacy acquisition; knowledge of the distinction between general academic and domain specific vocabulary; strategies to determine word meaning (i.e., contextual and morphological analysis)

Reading Comprehension: reading as the process of constructing meaning through interactions with text; factors that influence comprehension; typical elements and features of literature and informational texts (i.e., arguments, primary sources and secondary sources), and how readers' awareness of these features supports comprehension; cognitive and metacognitive strategies and instructional approaches for supporting comprehension of beginning and developing readers

Written Expression: writing as symbolic representation; the stages of early writing development; the writing process, including appropriate planning, organization and style for task, purpose and audience; the characteristics of quality writing and types of writing, including narratives, informational text (e.g., procedures and experiments) and arguments focused on domain specific content; the conventions of written English (i.e., grammar, usage, mechanics, punctuation, and spelling); methods for conducting research to build and present knowledge, the process of citing evidence from multiple sources

English Language Arts Performance Standards

The educator implements a language arts curriculum, by designing interdisciplinary units of instruction that foster interest and growth in all aspects of oral and written literacy, in order to provide ALL students with the communication skills necessary to understand and influence their own lives and to learn about the world. Specifically, the educator:

Foundational Skills: uses a variety of explicit and interactive approaches to teach foundational skills including concepts of print, phonological awareness, fluency, phonics and word recognition; uses instructional strategies to help students apply skills in authentic reading and writing tasks

Development of Oral Language and Literacy: uses active instructional strategies to promote various dimensions of oral language development; facilitates conversation and collaboration

Literature, Informational Text, and Media: uses a wide variety of fiction and non-fiction textual materials, including digital text and student self-selected material, to increase students' motivation to read independently for information, pleasure and personal growth; uses multiple metrics to purposefully select a wide variety of quality, age-appropriate literature—including complex text—across genres, eras, perspectives, cultures, and subcultures; selects and reads quality literature and informational text aloud and applies critical thinking skills and tools of analysis to facilitate discussions of central themes and ideas within; integrates visual information and technology with meaningful and authentic reading, writing, speaking, and listening tasks; teaches students how to analyze and judge the credibility of print and non-print communications

Speaking and Listening: models and teaches the elements of effective verbal and non-verbal communication; models and facilitates conversations and collaborations; models effective methods for delineating and presenting an argument

Language: employs effective instructional strategies for the development of general academic and domain specific vocabulary

Reading Comprehension: provides explicit instruction in how to flexibly use pre-, during, and post-reading cognitive and metacognitive strategies to understand, analyze, and interpret a variety of types of texts, including complex text; provides opportunities for students to respond to literature and informational text orally and in writing, cites evidence from text to support conclusions; models how to interpret author's purpose, style, point of view and rhetoric; distinguishes fact, opinion, and reasoned judgment in a text; makes connections between reading, writing, and literacy across content areas

Written Expression: provides multiple opportunities for beginning writers to learn that print carries meaning, to practice writing purposefully, and to apply sound-symbol relations in written tasks; promotes high quality writing using a variety of instructional strategies and topics to teach structures and composition; uses exemplars as instructional models for all types of composition (i.e., creative/narrative, informational/expository, and argumentative); models and teaches appropriate conventions of English; implements strategies to build fluency, accuracy, and automaticity in written communication; models methods of conducting short and sustained research to build and present knowledge; employs a range of instructional approaches to support writing across the content areas

Social Studies Knowledge Standards

The educator demonstrates knowledge of the historical and social science content, concepts, and skills of history, government, geography, and economics , as reflected in the standards approved by the State Board of Education for students. Specifically, the educator understands:

Major concepts and processes related to the four core disciplines within social studies and social studies inquiry, including skills related to developing questions and planning inquiries; applying disciplinary concepts and tools; evaluating sources and using evidence, including data; communicating conclusions; and understanding civic engagement

History: major developments and significant events and perspectives in U.S. and regional history and how they are relevant to life in the twenty-first century; major eras, events, and perspectives in the development of world civilization, including the establishment and spread of major world religions; cultural diversity and influences of a culture on institutions, literature, fine and performing arts; major discoveries, and the relationship between science, engineering, technology, and social, cultural, and economic change

Government: major concepts and processes of government, including features and concepts of the social contract, citizenship, and civic responsibility in a democratic society; structures, functions, and purposes of different governments, including local, national and international; major features and processes of Vermont and U.S. government; and how to engage in the government process, and advocate for a particular cause that benefits society

Geography: major features and processes of cultural and physical geography, including physical and human environmental interactions; map reading and creation; human population trends, migrations; how people of different cultural backgrounds interact with their environment, family, neighborhoods, and communities; current events; and global interconnections

Economics: major concepts and theories of economics, including the basic principles of economic decision-making, the national and global economy, and how they relate to historical and contemporary issues.

Social Studies Performance Standards

The educator implements history and social sciences curriculum by designing interdisciplinary units of instruction that integrate social studies skills and content and enables development of the habits of mind that support inquiry within social studies. Specifically, the educator:

Models how historians, geographers, and other social scientists view, research, analyze, and interpret the world

Incorporates instructional activities that enable children to make connections among themselves, their classroom, their community, their environment, and the larger world by sharing and experiencing community-based service, by exploring content and texts that represent the varied perspectives of people currently and historically, by participating in the arts, and by reading informational texts

Recognizes common historical preconceptions; predicts likely student misconceptions and proactively plans to address and correct those misconceptions

Provides opportunities for students to examine and interpret historical and contemporary events and issues using historical, geographical, and social science research methods, tools, and technologies, including accessing and using local historical resources and data

Creates or adopts instructional and assessment tasks that teach students to analyze and interpret primary and secondary sources; identify webs of cause and effect; differentiate between fact, opinion, and interpretation; and develop claims with supportive evidence

Integrates strategies for identifying and analyzing central ideas, assumptions, and questions in social studies resources and for seeking out and respecting multiple perspectives during social studies inquiry.

Mathematics Knowledge Standards

The educator demonstrates mathematical knowledge that supports the development of mathematical proficiency as characterized by conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive dispositions as reflected in the standards approved by the State Board of Education for students. Specifically, the educator understands:

Counting and Cardinality: pre-number concepts: non-quantified comparisons (less than, more than, the same), containment (e.g., 5 contains 3), 1-to-1 correspondence, cardinality, ordinality, and quantified comparisons

Number and Operations- Base Ten: the four operations of arithmetic and the arithmetic properties; the structure of place value notation in general and base ten notation and the use of these notations to order numbers, estimate, and represent order of magnitude; the basic number systems; whole numbers, integers, positive and negative rational numbers, and real numbers; additive, multiplicative, and proportional reasoning; computing fluently with multi-digit numbers and finding common factors and multiples; how to apply and extend previous understandings of numbers to the system of rational numbers

Number and Operations- Fractions: fractions as numbers; fraction equivalence and ordering; building fractions from unit fractions; decimal notation for fraction; comparing decimal fractions; using equivalent fractions as a strategy to add and subtract fractions; applying and extending previous understandings of multiplication and division of whole numbers and of fractions by fractions

Operations and Algebraic Thinking: algebraic notation and equation; order of operations, expression, equations and equality; functions and their relationship to modeling algebraic phenomena connected to a deep number sense; generating and analyzing patterns and relationships; applying and extending previous understanding of arithmetic to algebraic expressions; reasoning and solving one-variable equations and inequalities; representing and analyzing quantitative relationships between dependent and independent variables

Ratios and Proportional Relationships: ratio and rate concepts and use ratio and rate reasoning to solve problems

Geometry: composing and decomposing geometric figures; congruence and similarity; basic geometric figures in each dimension and key elements of these figures; planar coordinate geometry; transformational geometry; proof-making and proving conjectures about geometric shapes or relations; concepts of exploring and justifying formulas; solving real-world and mathematical problems involving area, perimeter, surface area and volume

Measurement and Data: describing and comparing measurable attributes; classifying and counting the number of objects in each category; the concept of a unit in terms of measurement; measuring and estimating lengths indirectly and by iterating length using non-standard and standard units; telling and writing time; representing and interpreting data; relating addition and subtraction to length; the nature and uses of data including the designing of an experiment; concepts of angle and measuring angles; converting like measurements within a given measurement

Probability and Statistics: basic concepts of probability and ways to represent them; appropriate types of representation and statistical calculations of data to inform and draw conclusions; statistical variability; summarizing and describing distributions

Mathematics Performance Standards

The educator demonstrates proficient use of mathematical practices such as: making sense of problems and persevering in solving them, reasoning abstractly and quantitatively, constructing viable arguments and critiquing the reasoning of others, modeling with mathematics, using appropriate tools strategically, attending to precision, looking for and making use of structure, and looking for and expressing regularity in repeated reasoning. Specifically the educator:

Knowledge of Student and Content: utilizes and builds upon learners' existing mathematics knowledge, skills, understandings;; encourages genuine curiosity when faced with novel mathematical situations; builds an awareness of the ways mathematical language develops, how the language used in mathematics factors in learning math for all students, as well as those who are English Language Learners; creates social learning contexts that engage learners in discussions and mathematical explorations among peers to motivate and extend learning opportunities within mathematics concepts and among disciplines

Knowledge of Content and Teaching: designs, selects and adapts worthwhile mathematics tasks and sequences of examples that support a particular learning goal; understands learning trajectories related to particular topics in mathematics and uses this knowledge to understand cultural differences as it pertains to mathematics among learners, such as algorithms or learning practices familiar to different groups of learners; predicts likely student misconceptions and proactively plans strategies to detect and correct those misconceptions within the design of student learning opportunities; supports students' learning of appropriate technical language associated with mathematics; constructs and evaluates multiple representations of mathematical ideas or processes; establishes correspondences between representations and understands the purpose and value of doing so; develops learners' abilities to give clear and coherent public mathematical (i.e. oral and written) communications in a classroom setting; models effective problem solving and mathematical practices: questioning, representing, communicating, conjecturing, making connections, reasoning and proving; self-monitors and cultivates the development of such practices in learners; uses various instructional applications of technology, judiciously, in ways that are mathematically and pedagogically grounded

Knowledge of Curriculum and Assessment: articulates a theory of mathematics teaching and learning; knows learning trajectories related to mathematical topics and uses this knowledge to sequence activities and design instructional tasks; understands the importance of careful sequencing and development of K-6 mathematical ideas, concepts, and skills; uses multiple strategies, including listening to and understanding the ways students think about mathematics; selects, uses, adapts, and determines the suitability of mathematics curricula and teaching materials for particular learning aligned with local and state curriculum standards, district textbooks and district and state assessments, and makes appropriate adjustments to address gaps;

Science Knowledge Standards

The educator demonstrates scientific knowledge that supports the development of scientific proficiency in both science as a body of knowledge and science as a process. This includes the development of students' scientific thinking; the scientific inquiry process; the engineering design cycle and the skills of science and engineering within the following domains: life sciences, physical sciences, earth and space sciences and engineering as reflected in the standards approved by the State Board of Education for students. Specifically, the educator understands:

The central practices of scientists and engineers including: asking questions in sciences, and defining problems in engineering; developing and using models; planning and carrying out investigations; analyzing and interpreting data; using mathematics and computational thinking; constructing explanations in science, and designing solutions in engineering; engaging in argument from evidence; and obtaining, evaluating, and communicating information

How science is related to other ways of knowing, how science and technology affect our society; the relationship of scientific study to contemporary, historical, technological, and societal issues and how the concepts and processes of science pertain to current controversies

Crosscutting concepts across disciplines including: patterns; cause and effect: mechanism and explanation; scale, proportion, and quantity; systems and system models; energy and matter: flows, cycles and conservation; structure and function; and stability and change

Physical Science: Fundamental concepts including the structure, properties, and interactions of matter; force and motion; energy; waves and their interactions with matter

Life Science: Fundamental concepts including the structures and processes of molecules and organisms; ecosystems, and their interactions, energy, and dynamics; heredity, inheritance and variation of traits; biological evolution, unity and diversity

Earth and Space Science: Fundamental concepts including earth's place in the universe; the solar system; earth's history; earth's materials and systems; weather and climate; earth and human activity

Engineering and Technology: Fundamental concepts, and applications of science including engineering design and design solutions; the interdependence and influence of science, engineering, and technology on society and the natural world

Science Performance Standards

The educator implements science curricula by designing interdisciplinary units of instruction that integrate skills and content and enable development of the habits of mind that support effective scientific inquiry. Specifically, the educator:

Models how scientists and engineers work

Provides opportunities for students to locate appropriate resources; design and conduct inquiry-based, open-ended scientific investigations; solve specific engineering challenges; interpret findings, communicate results/solutions in words, pictures, and with graphical representations; and make conclusions based on evidence

Designs a variety of activities so that all students use inquiry to: learn about the world; design and conduct investigations using appropriate methodology and technology; learn from books and other sources of information; communicate their findings using appropriate technology; and reconstruct previously learned knowledge

Understands and maintains safe science practices, including but not limited to the ethical and appropriate use and care for living organisms and scientific equipment, and the safe storage, use, and disposal of chemicals

Recognizes common prescientific notions and preconceptions; predicts likely student misconceptions and proactively plans to address and correct those misconceptions

Creates a spectrum of scientific investigations for students, including simple investigations and experiments in the classroom using everyday materials, field studies outside the classroom, and student-designed investigations

Structures integrated lessons using crosscutting concepts

Additional Requirements:

A minimum of a practicum, or the equivalent, in elementary education at both the primary (K-2) and upper elementary (3-6) instructional levels is required.